

# CLOSER: Our role & the resources we offer for cross-study research

Dara O'Neill

CLOSER

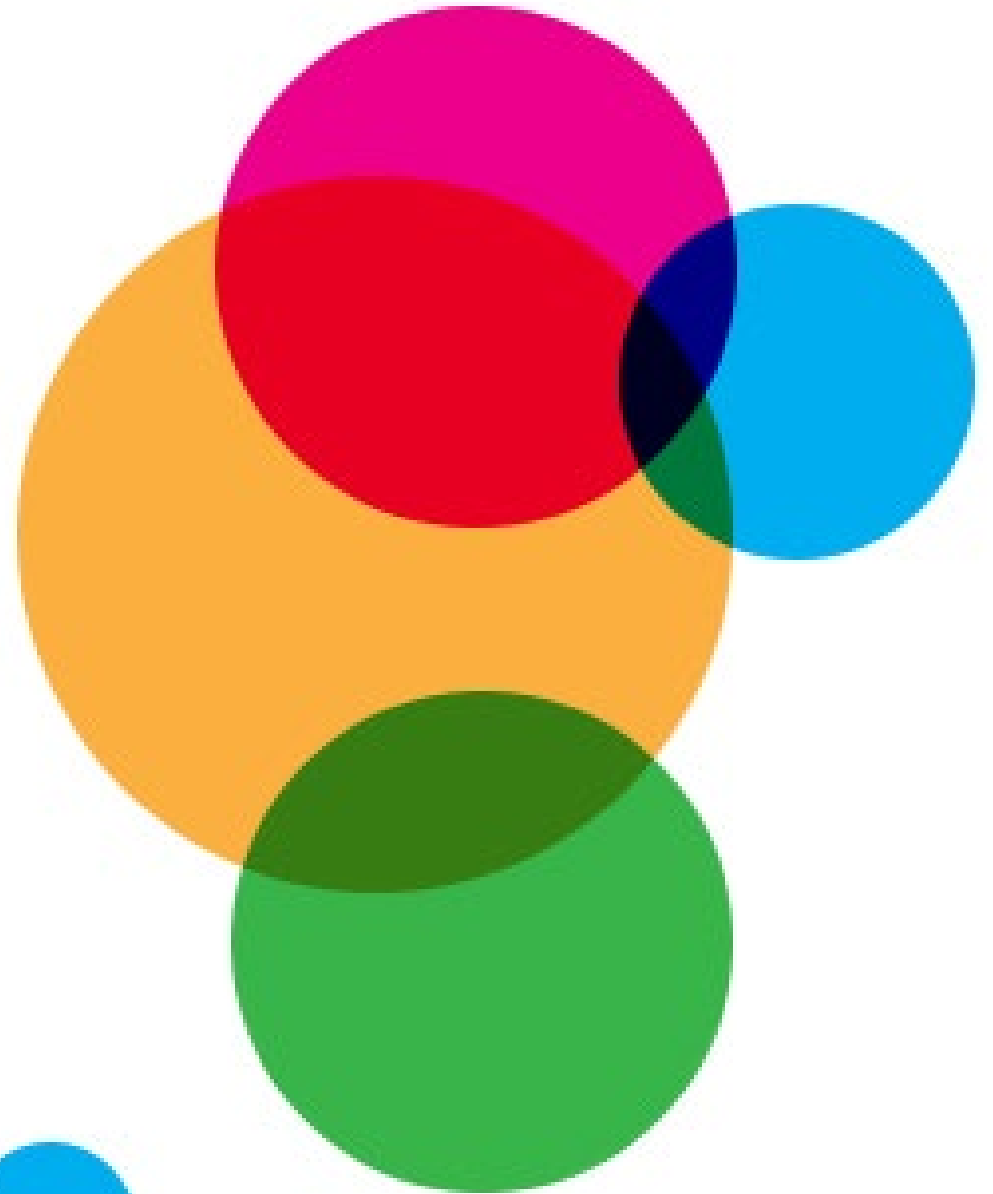
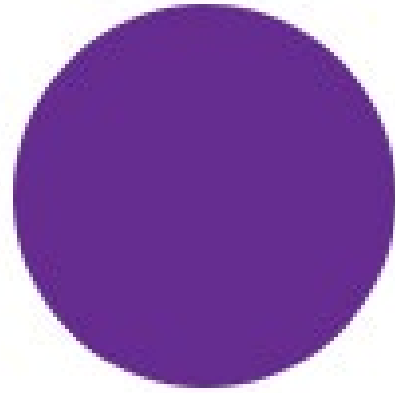
UCL Institute of Education

# Context

- Extensive history of **longitudinal research** in the UK
  - Longest running cohort has now been running for 72 years
  - Now 1 in 30 UK residents are participants in cohort studies
- Longitudinal studies have **diverse aims** and **designs**
- Benefits of increased **collaboration**
  - Sharing of expertise
  - Identification of new research avenues
    - Particularly cross-study work
  - Avoid overlap/duplication
  - Increase potential usability of outputs
  - Joint promotion of research findings



**CLOSER**



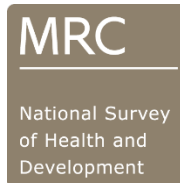


## Funders

**CLOSER** is funded by the Economic and Social Research Council (**ESRC**) and Medical Research Council (**MRC**).



## Consortium partners



UK Data Service





# Partner Studies

**Hertfordshire Cohort Study**

**1946 National Survey of Health and Development**

**1958 National Child Development Study**

**1970 British Cohort Study**

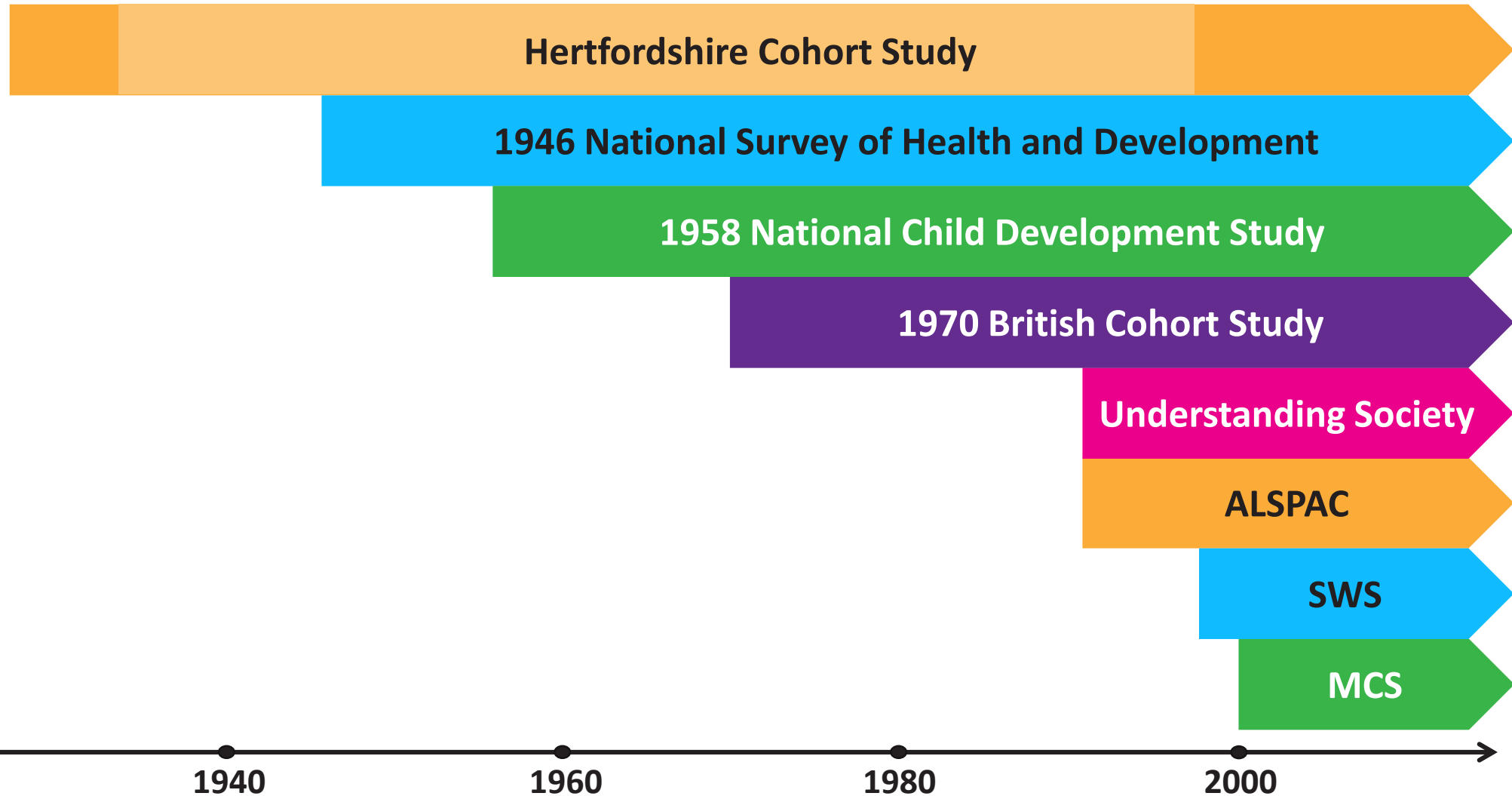
**Understanding Society: The UK Household Longitudinal Study**

**Avon Longitudinal Study of Parents and Children (ALSPAC)**

**Southampton Women's Survey (SWS)**

**Millennium Cohort Study (MCS)**

# Partner Studies



The background is white and filled with numerous circles of different colors and sizes. The colors include purple, orange, green, blue, pink, grey, and dark blue. Some circles are large and prominent, while others are small and scattered. On the right side, there is a large, complex cluster of overlapping circles in orange, red, magenta, blue, and green. The text "What we do" is positioned on the left side of the image.

**What we do**



# Our Core Areas of Work



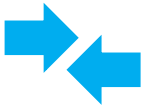


# Harmonisation

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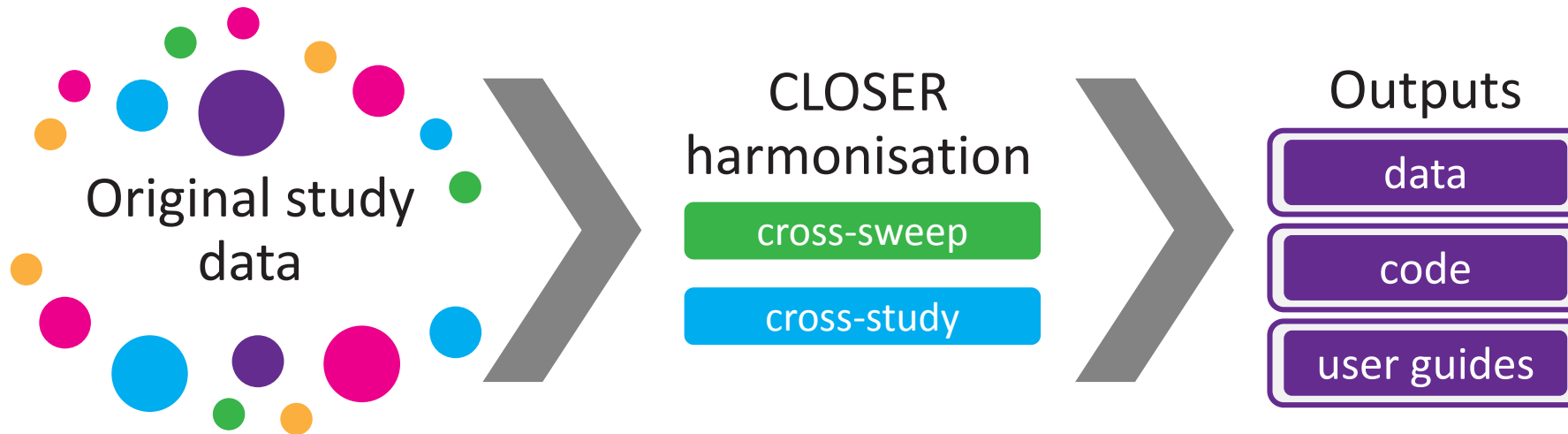


- Improving the **comparability of data** across different studies or collection periods within the same study
- Increases sample size and statistical power, and helps in research replication
- Enabling **change over time and across generations** to be better understood
- **Not just data**, also methods of assessment and data interpretation
- Prospective better, but most is **retrospective**
  - **Encourages reuse of data**



# CLOSER Harmonisation Work:

## Making Data Interoperable & Re-usable



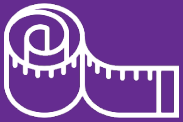
Made available via the  
**UK Data Service**  
<https://www.ukdataservice.ac.uk>



# CLOSER Harmonisation Work: Datasets



**Body size &  
composition**



**Socio-  
economic  
status**



**Earnings &  
Income**



**Education**



**Visual  
functioning**



**Childhood  
environment &  
adult mental  
wellbeing**



**Overcrowding  
& health**



**Dietary Data**



**Physical  
Activity  
Measures**



**Cognitive  
Measures**



**DNA  
Methylation**



**Mental Health  
Measures**





# CLOSER Harmonisation Work: Methodological Guides

**Strategies for  
analysing  
biological  
samples**



**Cross-study  
biomarker  
data  
availability**



**Methods for  
determining  
pubertal status**



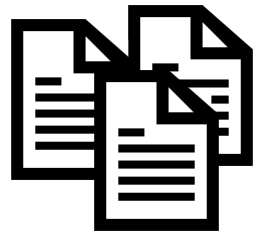
**Mental Health  
& Wellbeing  
Measure  
Usage**





# CLOSER Harmonisation Work: Documenting Learning

- Understanding **inter-study differences** in measurement methods
- Effect of **changing context** over time on measurement, data & interpretation
- Exploring burden of **missing data** and utility of strategies for addressing these
- Identifying metrics for **validating** harmonised outputs
- Improving usage and **impact** on research and policy



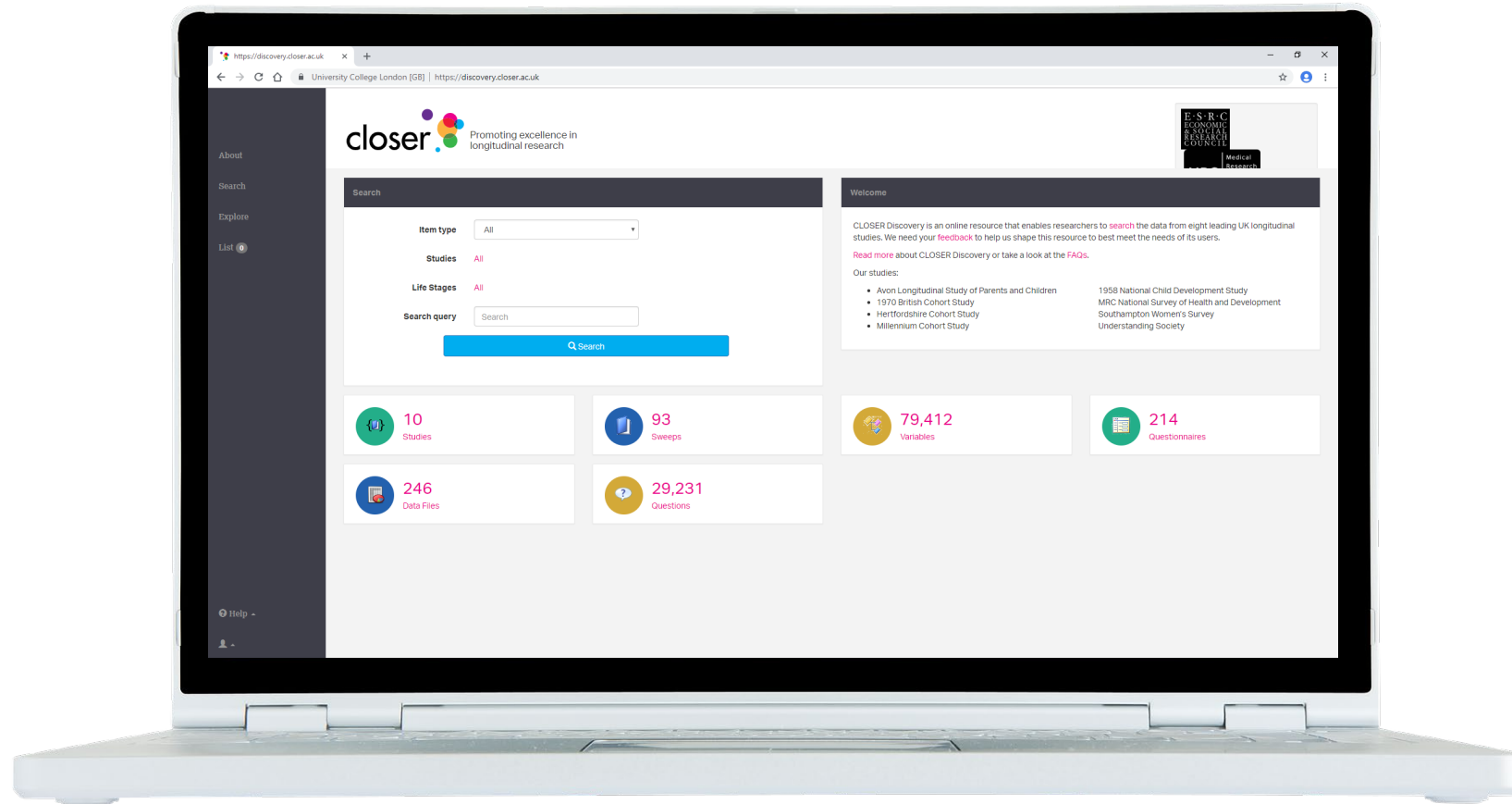


# Discoverability

---

- Study **metadata**
  - Data about data
  - Key to:
    - Locating data from studies
    - Understanding how data were collected
    - Using data appropriately
  - Particularly important when seeking and using data from different sources
- CLOSER makes a data **discovery tool** freely and openly available...

# CLOSER Discovery



<https://discovery.closer.ac.uk/>

About

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### Search

Item type

All

Studies

All

Life Stages

All

Search query

Search

 Search

### Welcome

CLOSER Discovery is an online resource that enables researchers to [search](#) the data from eight leading UK longitudinal studies. We need your [feedback](#) to help us shape this resource to best meet the needs of its users.

[Read more](#) about CLOSER Discovery or take a look at the [FAQs](#).

Our studies:

- Avon Longitudinal Study of Parents and Children
- 1970 British Cohort Study
- Hertfordshire Cohort Study
- Millennium Cohort Study
- 1958 National Child Development Study
- MRC National Survey of Health and Development
- Southampton Women's Survey
- Understanding Society



10

Studies



93

Sweeps



79,412

Variables



214

Questionnaires



246

Data Files



29,231

Questions

**Coverage**



Why use CLOSER Discovery?

Introductory Webinar Video

Introduction to Metadata Concepts

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FAQs & How-to Guides

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## Search

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Studies

All

Life Stages

All

Search query

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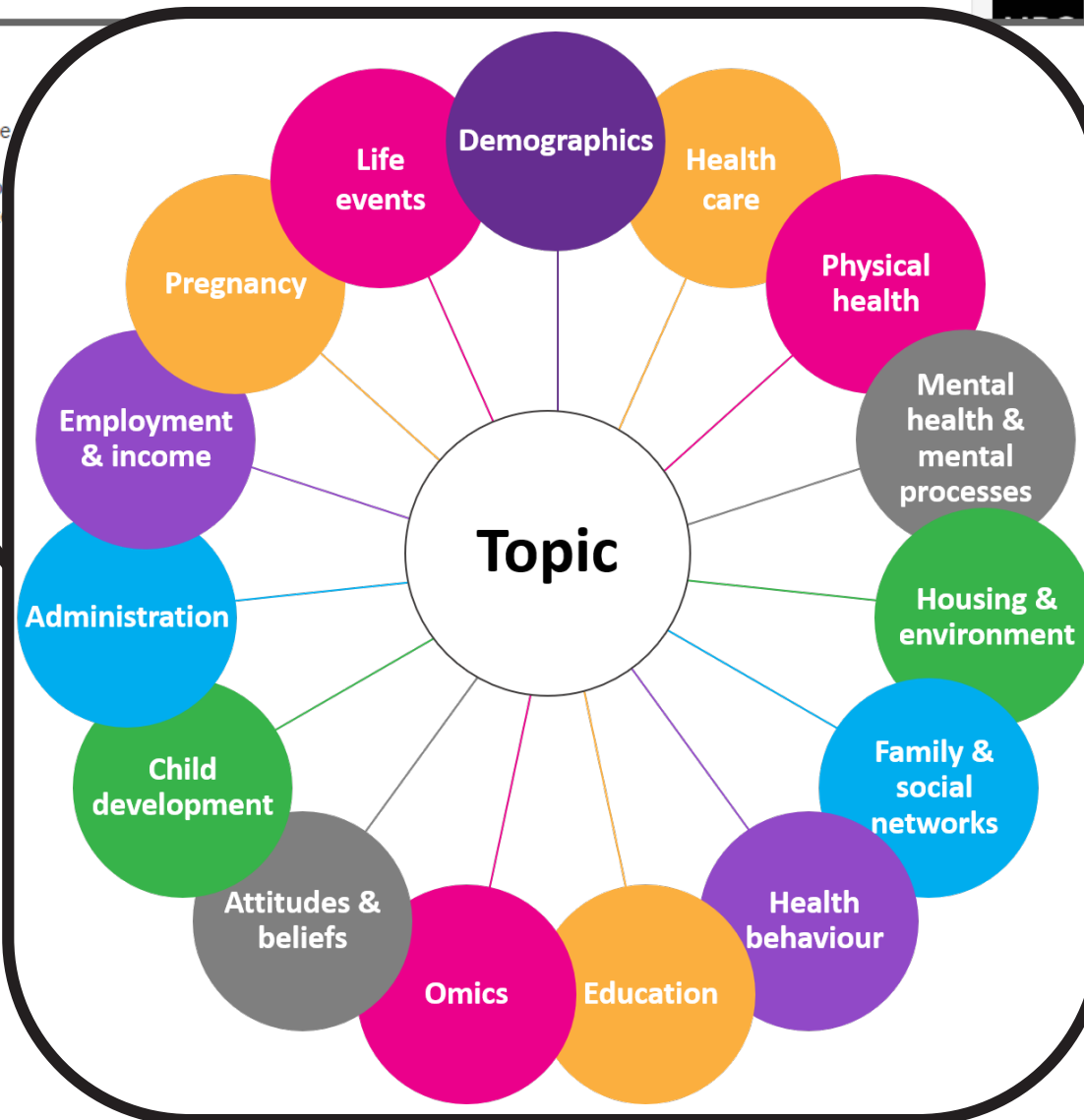
Explore

List **0**

- ☐ Demographics
- ☐ Housing and local environment (Housing and env
- ☐ Physical health
- ☐ Mental health and mental processes
- ☐ Health care
- ☐ Health behaviour (Health and lifestyle)
- ☐ Family and social networks
- ☐ Education
- ☐ Employment and income (Employment and pensi
- ☐ Expectations, attitudes and beliefs (Attitudes anc
- ☐ Child development
- ☐ Life events
- ☐ Omics
- ☐ Pregnancy
- ☐ Administration



Select an item on the  
Use the buttons above  
will be added in a later



Help



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## Advanced Search Tool

Item type

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Studies

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Life Stages

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Questions

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Sort by:

Relevance



Enter a search query above to get started.

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Sort by:

Relevance

Enter a search query above to get started.

Item Type



Phrasing used in original  
questionnaire

Variable labelling used in dataset

Etc.

Study



Life Stage



Topic



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Search



Sort by: Relevance ▾

Enter a search query above to get started.

Pregnancy, birth & infancy

Early years

Childhood

Adolescence

Mid-adulthood

Third age

Other (multi-stage/cross-life)



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Sort by: Relevance ▾

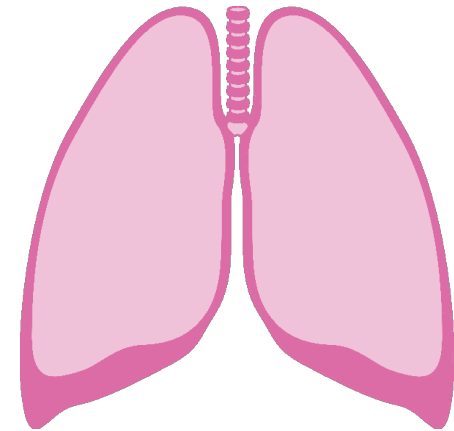
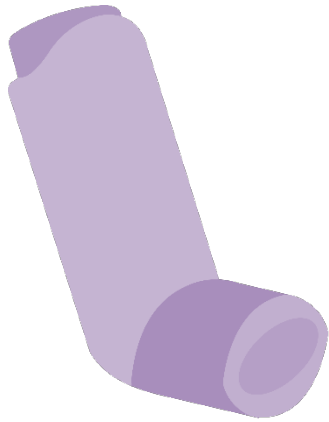


Enter a search query above to get started.



# Example

Finding variables across different studies that capture  
**asthma in early childhood**



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Life Stage >

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asthma



Sort by: Relevance ▼

Enter a search query above to get started.

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asthma



Sort by: Relevance ▼



Enter a search query above to get started.



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Item Type ▾

- ☐ Studies (-10)
- ☐ Sweeps (-93)
- ☐ Data Files (-246)
- ☒ Variables (-79,412)
- ☐ Questionnaires (-214)
- ☐ Questions (0)

More...

Refine

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Life Stage >

Topic >

Help



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asthma



Sort by: Relevance ▾



Enter a search query above to get started.

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Study


### Life Stage

- ☐ Pregnancy, birth and infancy (22,065)
- ☒ Early years (26,856)
- ☒ Childhood (85,837)
- ☐ Adolescence (2,961)
- ☐ Mid-adulthood (4,057)
- ☐ Third age (2,773)
- ☐ Other (7,251)

Refine

Reset

Topic 

Help 



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asthma



Sort by:

Relevance



Enter a search query above to get started.

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Study



### Life Stage

- ☐ Pregnancy, birth and infancy (22,065)
- ☒ Early years (26,856)
- ☒ Childhood (85,837)
- ☐ Adolescence (2,961)
- ☐ Mid-adulthood (4,057)
- ☐ Third age (2,773)
- ☐ Other (7,251)

Refine

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### Topic

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asthma



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### Item Type

- ☐ Studies (0)
- ☐ Sweeps (0)
- ☐ Data Files (0)
- ☒ Variables (-101)
- ☐ Questionnaires (0)
- ☐ Questions (0)

More...

Refine Reset

### Study

### Life Stage

- ☐ Pregnancy, birth and infancy (+10)

Help



asthma Sort by: Relevance



Item types: Variables

Query: asthma

Search life stages: Early years, Childhood

Results 1 to 20 of 101 (0.016 seconds)

#### + ASTMD3

##### Asthma

Has this child, during the last year, had an attack of asthma?

Study: [National Survey of Health and Development](#) / Sweep: [1957 \(aged 11 years\)](#) / Data File: [1957 Examination by the School Doctor Dataset](#)

#### + DRCND2

##### Treatment - asthma

Has a doctor been consulted about his asthma?

Study: [National Survey of Health and Development](#) / Sweep: [1953 \(aged 7 years\)](#) / Data File: [1953 School Doctor Dataset](#)

#### + INVGD3

##### Asthma - investigations

Study: [National Survey of Health and Development](#) / Sweep: [1957 \(aged 11 years\)](#) / Data File: [1957 Examination by the School Doctor Dataset](#)



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### Item Type

- ☐ Studies (0)
- ☐ Sweeps (0)
- ☐ Data Files (0)
- ☒ Variables (-101)
- ☐ Questionnaires (0)
- ☐ Questions (0)

More...

Refine Reset

### Study

### Life Stage

- ☐ Pregnancy, birth and infancy (+10)

Help



asthma Sort by: Relevance

Item types: Variables  
Query: asthma  
Search life stages: Early years, Childhood

Results 1 to 20 of 101 (0.4 seconds)

Number of variables found

#### + ASTMD3

##### Asthma

Has this child, during the last year, had an attack of asthma?

Study: [National Survey of Health and Development](#) / Sweep: [1957 \(aged 11 years\)](#) / Data File: [1957 Examination by the School Doctor Dataset](#)

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Study: [National Survey of Health and Development](#) / Sweep: [1953 \(aged 7 years\)](#) / Data File: [1953 School Doctor Dataset](#)

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Study: [National Survey of Health and Development](#) / Sweep: [1957 \(aged 11 years\)](#) / Data File: [1957 Examination by the School Doctor Dataset](#)

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### Item Type

- ☐ Studies (0)
- ☐ Sweeps (0)
- ☐ Data Files (0)
- ☒ Variables (-101)
- ☐ Questionnaires (0)
- ☐ Questions (0)

More...

Refine Reset

### Study

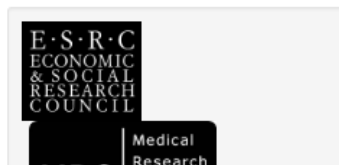
### Life Stage

- ☐ Pregnancy, birth and infancy (+10)

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asthma Sort by: Relevance



Item types: Variables

Query: asthma

Search life stages: Early years, Childhood

Results 1 to 20 of 101 (0.016 seconds)

#### + ASTMD3

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##### Asthma - investigations

Study: [National Survey of Health and Development](#) / Sweep: [1957 \(aged 11 years\)](#) / Data File: [1957 Examination by the School Doctor Dataset](#)

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### Item Type

- ☐ Studies (0)
- ☐ Sweeps (0)
- ☐ Data Files (0)
- ☒ Variables (-101)
- ☐ Questionnaires (0)
- ☐ Questions (0)

More...


Refine



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### Study

### Life Stage

- ☐ Pregnancy, birth and infancy (+10)

Help 

asthma  Sort by: Relevance 

Item types: Variables

Query: asthma

Search life stages: Early years, Childhood

Results 1 to 20 of 101 (0.016 seconds)



ASTMD3

Variable name

Asthma

Variable label

Has this child, during the last year, had an attack of asthma?

Study: [National Survey of Health and Development](#)

Sweep: [1957 \(aged 11 years\)](#)

Data File: [1957 Examination by the School Doctor Dataset](#)



DRCND2

Study

his asthma?

Sweep

Data file where variable is stored

Study: [National Survey of Health and Development](#) / Sweep: [1953 \(aged 7 years\)](#) / Data File: [1953 Examination by the School Doctor Dataset](#)



INVD3

Asthma - investigations

Study: [National Survey of Health and Development](#) / Sweep: [1957 \(aged 11 years\)](#) / Data File: [1957 Examination by the School Doctor Dataset](#)

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Metadata Tools

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National Survey of Health and Development

1957 (aged 11 years)

1957 Examination by the School Doctor Dataset

Further Info, e.g.

- Original question
- Neighbouring questions
- Original questionnaire

Variable

Details

Sources

Lineage

Name ASTMD3

Label Asthma

Dataset

Descriptive Statistics

Value	Label	Frequency	
-9999	No D3	1267	<div></div>
-9899	No answer	26	<div></div>
-9799	Unknown (blank on rubric card)	5	
0	No	3996	<div></div>
1	Yes	68	<div></div>
Valid	Min	Max	Mean
5362	-9999	1	-2419.81

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Search

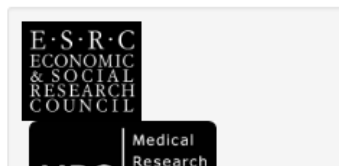
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Help



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- Demographics
- Housing and local environment (Housing and env
- Physical health
- Mental health and mental processes
- Health care
- Health behaviour (Health and lifestyle)
- Family and social networks
- Education
- Employment and income (Employment and pensi
- Expectations, attitudes and beliefs (Attitudes anc
- Child development
- Life events
- Omics
- Pregnancy
- Administration



Select an item on the left.

Use the buttons above to view variables and questions. Harmonized variables  
will be added in a later build.



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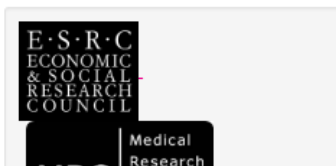
Explore

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- Demographics
- Housing and local environment (Housing and env)
- Physical health
  - Cardiovascular system
  - Musculoskeletal system
  - Respiratory system**
  - Nervous system
  - Digestive system
  - Urogenital system
  - Endocrine system
  - Hemic and immune systems
  - Hearing, vision, speech
  - Oral/dental health
  - Skin diseases | Dermatology
  - Congenital malformations
  - Cancer
  - Mortality
  - Reproductive health
  - Women's health
  - Accidents and injuries
  - Allergies
  - Infections
  - Anthropometry
  - Physical characteristics
  - Physical functioning
  - General health
- Mental health and mental processes
- Health care
- Health behaviour (Health and lifestyle)
- Family and social networks



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- + N259**  
1P Ever had an asthma attack  
National Child Development Study / Age 7 Survey (1965) / NCDS1 Parental Questionnaire (1965) Dataset /
- + N260**  
1P Ever bronchitis with wheezing  
National Child Development Study / Age 7 Survey (1965) / NCDS1 Parental Questionnaire (1965) Dataset /
- + N261**  
1P Ever pneumonia  
National Child Development Study / Age 7 Survey (1965) / NCDS1 Parental Questionnaire (1965) Dataset /
- + N1305**  
2P Ever asthma or wheezy bronchitis  
National Child Development Study / Biomedical Survey (2002) / NCDS Biomedical Interview (2002) Dataset /
- + N1306**  
2P Frequency of asthma-bronchitis attack  
National Child Development Study / Age 11 Survey (1969) / NCDS2 Parental Interview Form (1969) Dataset /
- + N1393**  
2P Ever seen spec-asthma, whzy bronchitis  
National Child Development Study / Biomedical Survey (2002) / NCDS Biomedical Interview (2002) Dataset /
- + lcroup**  
12m: Episodes of croup or croupy cough  
Southampton Women's Survey / 12 Months / 12 Month Dataset /
- + lbronch**  
12m: Times diagnosed with chest infection or bronchitis  
Southampton Women's Survey / 12 Months / 12 Month Dataset /
- + lpneum**  
12m: Times diagnosed with pneumonia or bronchiolitis  
Southampton Women's Survey / 12 Months / 12 Month Dataset /

About

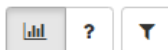
Search

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Help

- Demographics
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- Physical health
  - Cardiovascular system
  - Musculoskeletal system
  - Respiratory system**
  - Nervous system
  - Digestive system
  - Urogenital system
  - Endocrine system
  - Hemic and immune systems
  - Hearing, vision, speech
  - Oral/dental health
  - Skin diseases | Dermatology
  - Congenital malformations
  - Cancer
  - Mortality
  - Reproductive health
  - Women's health
  - Accidents and injuries
  - Allergies
  - Infections
  - Anthropometry
  - Physical characteristics
  - Physical functioning
  - General health
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- Health care
- Health behaviour (Health and lifestyle)
- Family and social networks



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**+ N259**  
1P Ever had an asthma attack  
National Child Development Study / Age 7 Survey (1965) / NCDS1 Parental Questionnaire (1965) Dataset /

**+ N260**  
1P Ever bronchitis with wheezing  
National Child Development Study / Age 7 Survey (1965) / NCDS1 Parental Questionnaire (1965) Dataset /

**+ N261**  
1P Ever pneumonia  
National Child Development Study / Age 7 Survey (1965) / NCDS1 Parental Questionnaire (1965) Dataset /

**+ N1305**  
2P Ever asthma or wheezy bronchitis  
National Child Development Study / Biomedical Survey (2002) / NCDS Biomedical Interview (2002) Dataset /

**+ N1306**  
2P Frequency of asthma-bronchitis attack  
National Child Development Study / Age 11 Survey (1969) / NCDS2 Parental Interview Form (1969) Dataset /

**+ N1393**  
2P Ever seen spec-asthma,whzy bronchitis  
National Child Development Study / Biomedical Survey (2002) / NCDS Biomedical Interview (2002) Dataset /

**+ lcroup**  
12m: Episodes of croup or croupy cough  
Southampton Women's Survey / 12 Months / 12 Month Dataset /

**+ lbronch**  
12m: Times diagnosed with chest infection or bronchitis  
Southampton Women's Survey / 12 Months / 12 Month Dataset /

**+ lpneum**  
12m: Times diagnosed with pneumonia or bronchiolitis  
Southampton Women's Survey / 12 Months / 12 Month Dataset /



Variable Details Sources Lineage

Name N259

Label 1P Ever had an asthma attack

Dataset UKDA-SN-5565-2

Value	Label	Frequency
-1	NA	864
1	Dont know	41
2	Yes	446
3	No	14074

Valid	Invalid	Min	Max	Mean
14561	864	1	3	2.96

# CLOSER Discovery:

## Making Metadata Accessible & Data Findable





# Linkage

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- Combining **administrative data** and longitudinal study data can offer new insights and enhance the value of both types of data
- Administrative data is however not **designed** for research purposes
- Data processing regulations are an important consideration
  - Specific **consent** of study participants required
- Linkage decisions can result in **bias**
- Researchers often face hurdles in accessing such data
  - Need to identify **best practice** and workable solutions





# CLOSER Data Linkage Work: Research Areas & Outputs

## Education data



- Consistent Schools Database

## Geographical data



- Geo-contextual identifier datasets (NCDS & BCS70)
- Resource report on geographical variables

## Health record data



- User guides for NHS Digital linkage
- Resource reports

## Social media data linkage



- In progress



# Training & Capacity Building

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- CLOSER aims to improve practice in cross-study research through the provision of learning resources and training events:



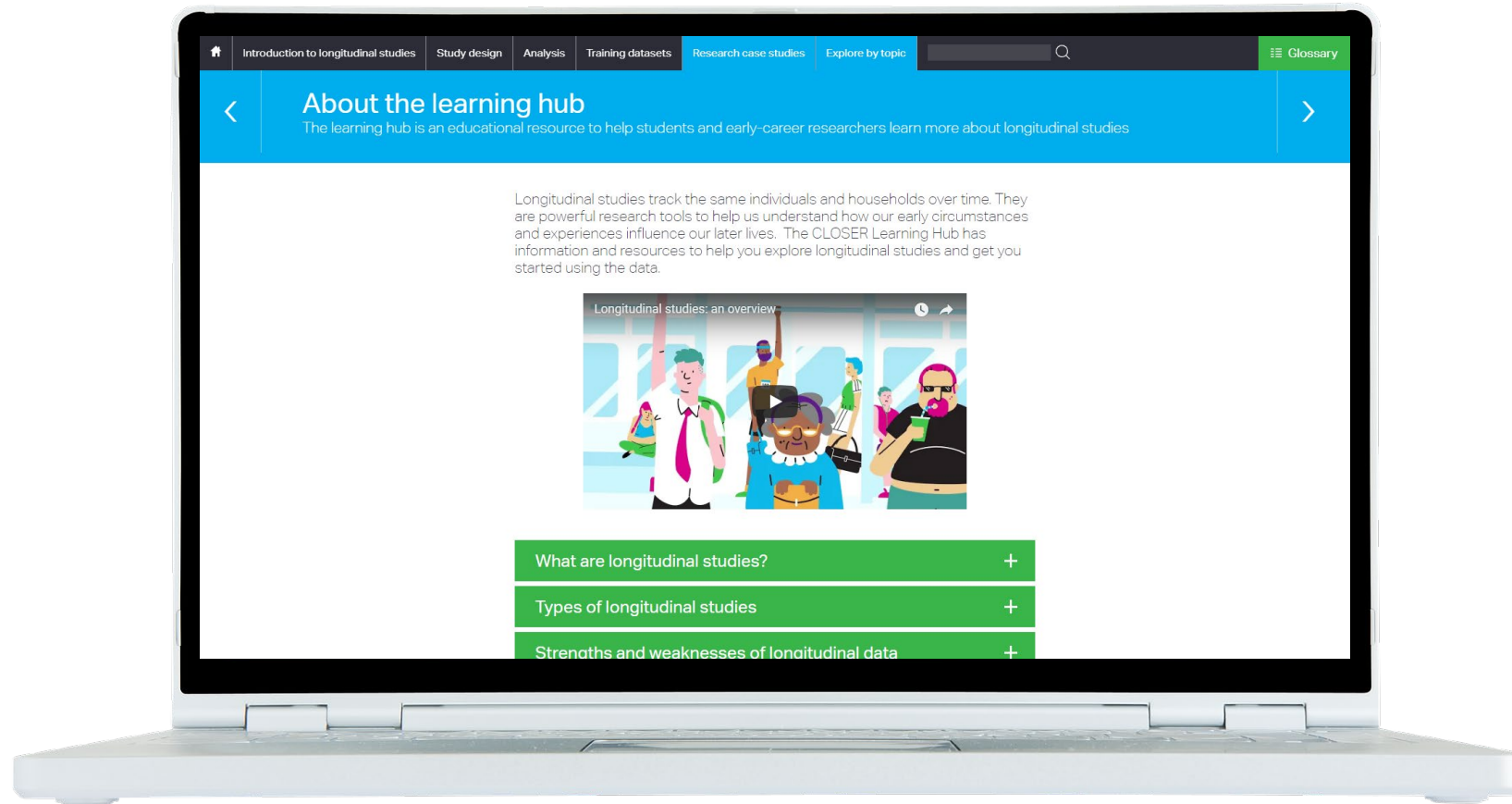
Workshops &  
Seminars



CLOSER  
Learning Hub



# CLOSER Learning Hub



<https://learning.closer.ac.uk/>



# CLOSER Learning Hub

## Learning modules

Introduction to  
longitudinal studies

Study design

Longitudinal data  
analysis

Quizzes



Presentation slides



Video animations



Training datasets



## Longitudinal & cross-study research examples

Research case studies

Topic discussions

# Impact

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- Raising **awareness** of longitudinal research
- Brokering **relationships** between researchers, policymakers & parliamentarians
- Helping longitudinal evidence **influence** policy development



# Summary

CLOSER aims to maximise the use, value & impact of longitudinal study data

Makes cross-study resources available to researchers

Encourages cross-study collaboration and engagement to promote research & increase impact

## Keeping in touch

- *Website:* <https://www.closer.ac.uk/>
- *Twitter:* @CLOSER\_UK
- *Email:* [closer@ucl.ac.uk](mailto:closer@ucl.ac.uk)
- *Newsletters:* Including 'Longitudinal news'



We always welcome input on how we can better help you in your cross-study work